**Pointers and Array-**

1. Array is a collection of similar data type elements.
2. When we declare an array then consecutive memory locations are allotted to array elements.
3. The base address of array is the address of 0th element of the array.

Example :

int arr[4] = {5,10,15,20}

Here the base address of array is the address of 0th element of array. Since the array is of type int, hence address of the next element of array is incremented by 2.

Following are the 2 main points to understand the concept of pointer with array.

1. Elements of the array are stored in consecutive memory locations.
2. When an array pointer is incremented, it refers to the next location of its data type.

int arr[4] = {5,10,15,20}

int \*a;

a = arr; / a = &arr[0]

a = &arr[0];

a+1 = &arr[1];

a+2 = &arr[2];

a+3 = &arr[3];

/\*program to print the value and address of the element\*/

#include<stdio.h>

main()

{

int arr[4] = {5,10,15,20};

int i = 0;

for( i=0; i<4; i++)

{

printf(“ value of arr[%d] = %d\n”, i, arr[i]);

printf(“ address of arr[%d] = %u\n”,i,&arr[i]);

}

}

**/\* WAP to print the value and address of the element of array using pointer \*/**

**#include <stdio.h>**

**int main()**

**{**

**int arr[4]={4,5,6,8};**

**int \*a;**

**a=arr;**

**for(int i=0;i<4;i++)**

**{**

**printf("The value of arr[%d]=%d\n",i,\*a);**

**printf("The address of arr[%d]=%u\n",i,a);**

**a=a+1;**

**}**

**return 0;**

**}**

/\*Use the pointer with function to print the value and address of the array element\*/

#include<stdio.h>

main ()

{

int arr[4] = {5,10,15,20} ;

fun(arr);

}

fun (int \*a)

{

int i;

for(i=0; i<4; i++)

{

printf(“ value of arr[%d] = %d\n”, i \*a);

printf(“ address of arr[%d] = %u\n”,i,a);

a= a+1;

}

}

int arr[4] = {5,10,15,20}

arr denotes base address of the array arr

arr+0 denotes base address of the array arr

\*arr gives the 0th element of the array arr

\*arr = \*(arr+0) = arr[0]

\*(arr+1) = arr[1]

Denotes ith element of the array

\*(arr+i)

\*(i+arr)

i[arr]